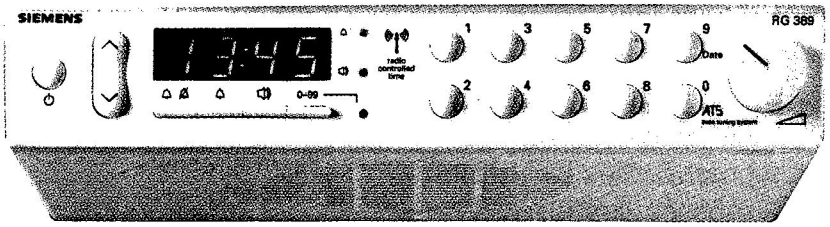
SIEMENS



Küchenradio RG389F3/F5
Clockradio RG389F3/F5
for Kitchen

Kundendienstschrift
Service manual

Allgemeine Technische Angaben

Netzteil

Energieversorgung: 230 V, 50 Hz

Sicherung: 250 V / 0,630 A / träge

Radio

Wellenbereich: 87,5 ... 108 MHz

10 UKW-Stationsspeicher

Uhr

Funkuhr

Verstärker

NF-Ausgangsleistung (Kges = 10 %, 1 kHz): 2 W

General Technical Data

Power supply unit

Power supply: 230 V, 50 Hz

Fuse: 250 V / 0.630 A / slow-blowing

Radio

Range: 87.5 ... 108 MHz

10 FM-presets

Clock

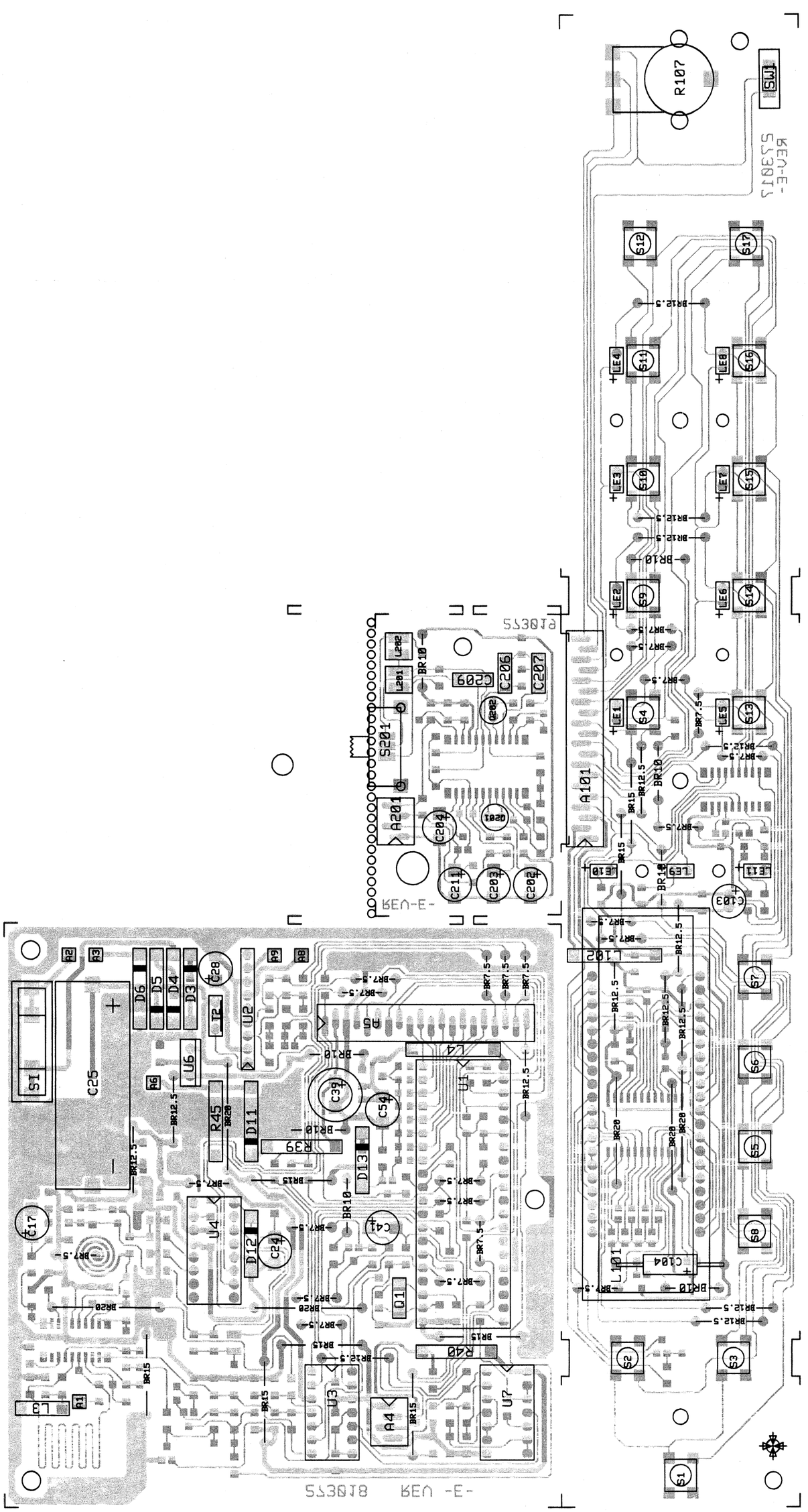
Radio signal clock

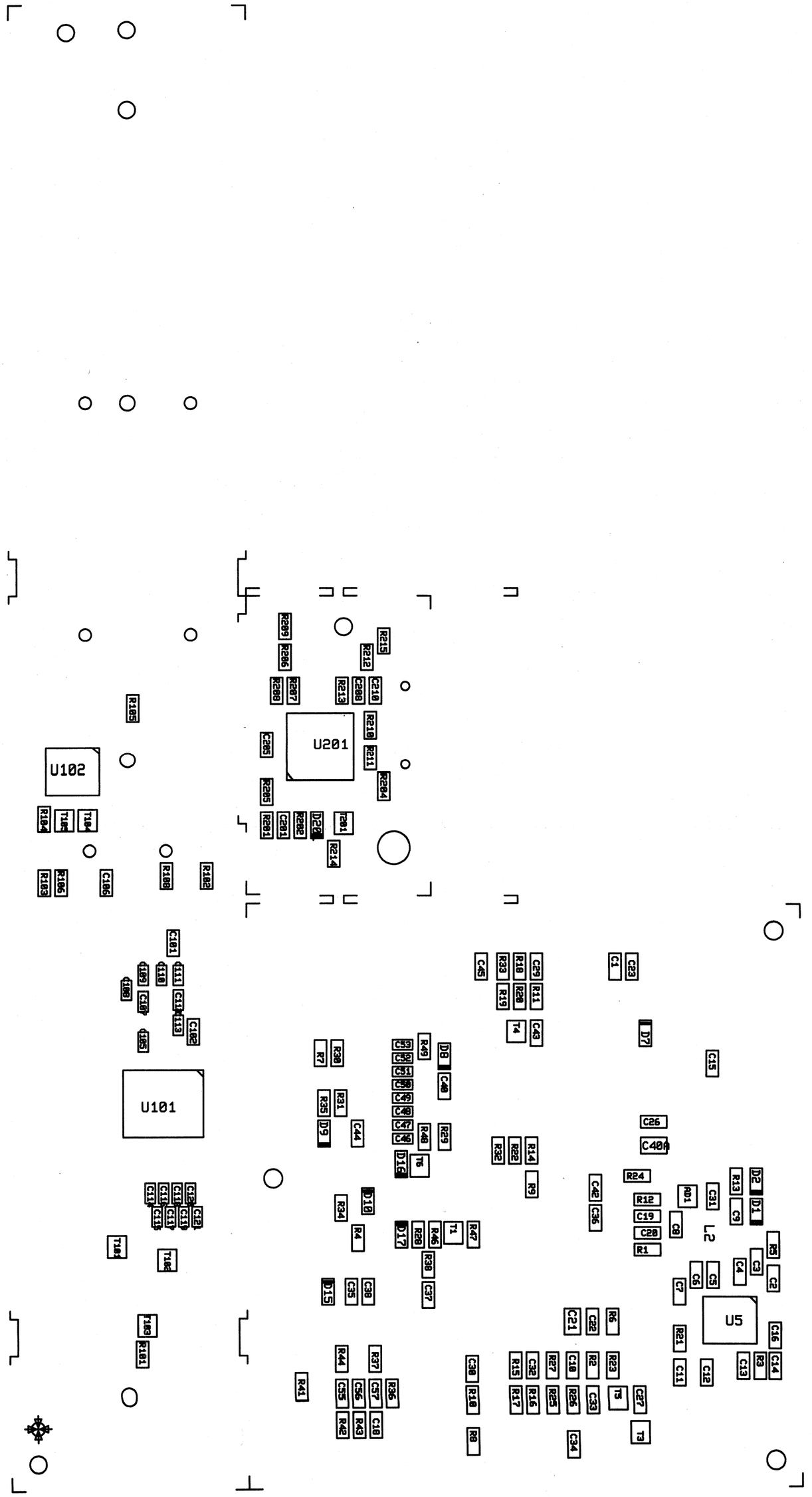
Amplifier

Power output (T.H.D = 10 %, 1 kHz): 2 W

Ausgabe/Issue 324

Ident-Nr./Order-no. 53 5534




U102
U101
U201
U5
L2
R105
R209
R206
R207
R208
R213
C208
C210
R215
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R211
R204
C205
R205
R201
C201
D201
R202
R214
D7
C15
C26
C40
R24
R12
C19
C20
R1
C31
C9
AD1
C8
C1
C23
C29
R11
R10
R20
R33
R19
C45
C43
T4
R14
R22
R32
R9
C42
C36
R49
D8
C40
R48
R29
T6
D16
R47
T1
R46
R30
C37
D17
R7
R30
R31
R35
D9
C44
D10
R34
R4
C38
C35
D15
R41
C21
C22
R6
R2
R23
T5
C27
T3
R27
R25
C32
R16
R15
R17
C10
R26
C33
C34
C30
R10
R8
R37
C57
C18
R44
C56
R43
C55
R42
R36
C5
C6
C4
C3
R5
C2
C7
C16
C14
R3
C13
C12
R21
C11
C101
C111
C110
C114
C113
C102
C105
C107
C108
C109
C112
C103
C104
C106
R108
R102
R104
T105
T104
R106
R103
T101
T106
R109
R101

RG389F3/F5 mit Funkuhr

Das Küchenradio RG389 ist unser erstes Modell bei dem die Uhr durch ein Zeitzeichensignal über Funk synchronisiert wird. Die Auswertung des Zeitzeichensignals erfolgt im IC U201. Das ist das FK0950CC*.

RG389 F3/F5 with Radio Clock

The kitchen radio RG389 is our first Model at which the clock is synchronized by a time signal via radio. The transformation of the time signal is made in IC U201. This is the FK0950CC*.

Das Zeitzeichensignal

Für Zeitzeichensignale die störungsfrei und mit großer Genauigkeit übertragen werden sollen, kommt nur der Frequenzbereich bis 80 kHz in Frage. Weltweit gibt es mehr als ein Dutzend Langwellen-Zeitzeichensender, wobei die Signalstruktur der einzelnen Sender unterschiedlich ist. Da mit abnehmender Sendefrequenz die Eindringtiefe der LW-Strahlung in die Wasseroberfläche zunimmt, werden diese niedrigen Frequenzen vorrangig für die Navigation verwendet.

The time signal

For time signals which should be transmitted static-free and with a high accuracy, only the frequency range up to 80 kHz can be used. Worldwide there are more than a dozen long-wave time signal senders, however, the signal structure of the individual senders is different. As the radius of action of the long-waves into the water surface increases when the sender frequency decreases, these low frequencies are used above all for navigation purposes.

Unsere Funkuhr wird mit einem Zeitzeichensignal von 77,5 kHz durch den deutschen Sender in Mainflingen, der mit 50 kW abstrahlt, synchronisiert.

Our radio clock is synchronized with a time signal of 77,5 kHz from the German sender in Mainflingen, which transmits with 50 kW.

Das gesendete Signal hat eine Struktur die sich minütlich wiederholt. Es wird das Trägersignal von 77,5 kHz jede Sekunde (außer in der 59. Sekunde) für 100ms bzw. 200ms auf 25 % Sendeleistung reduziert. Die Zeitcodierung erfolgt im BCD-Code wobei die 100ms logische L und 200ms logisch H bedeuten.

The transmitted signal has a structure which repeats itself every minute. The carrier frequency signal of 77,5 kHz is reduced every second (except in the 59th second) from 100ms or 200ms to 25% of the transmitting power. The time coding is made in BCD-Code in which the 100ms mean logical L and 200ms logical H.

* Aus Geheimhaltungsgründen hat uns der IC-Produzent keinerlei Unterlagen zum IC zur Verfügung gestellt.

* For secrecy purposes the IC-manufacturer has not given us any documents about the IC.

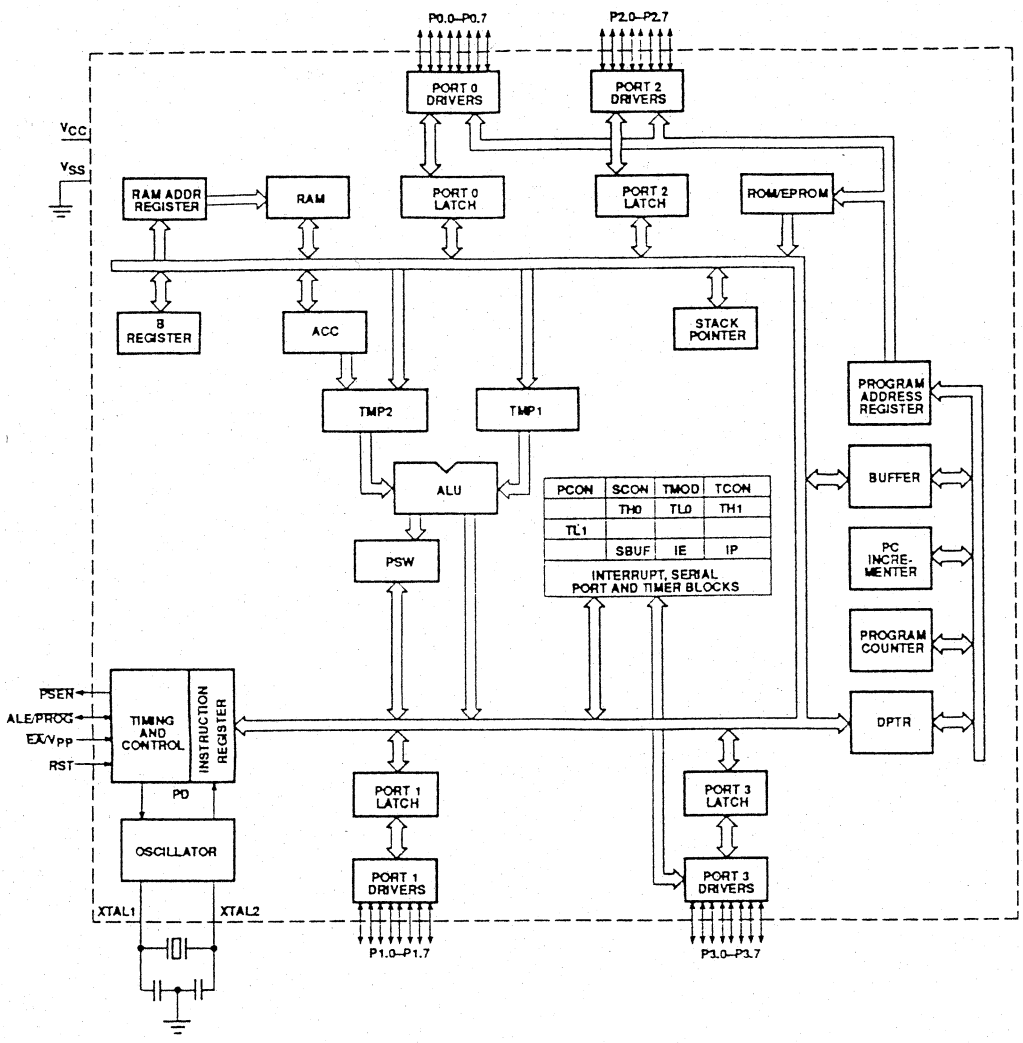
Die detaillierte Signalstruktur entnehmen Sie der folgenden Tabelle:

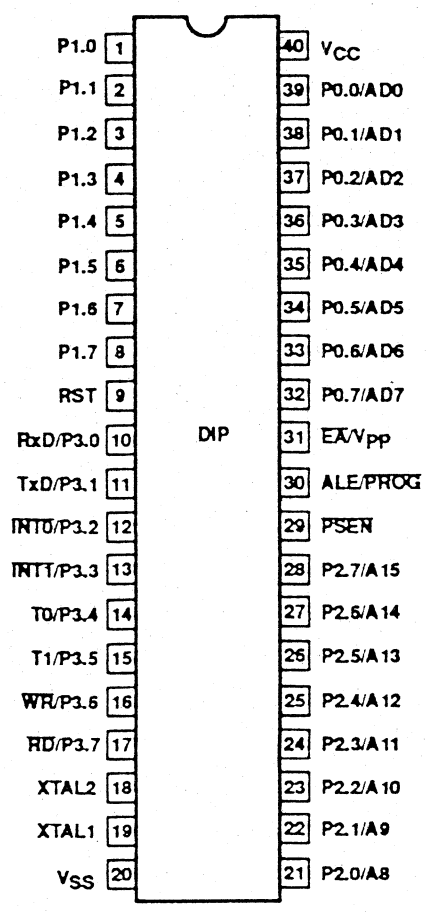
Sekunden-Bit	Information
0	Minutenmarke M
1...14	Offen. Hier kann der Sender je nach Bedarf codieren
15	Information R. Die Aussendung erfolgt über Ausweichantenne ja/nein.
16	Information A. Ankündigung und Abkündigung der Sommerzeit.
17/18	H bei Sommerzeit
19	Keine Angabe
20	Startbit S für codierte Zeitinformation = H
21...24	Minuten-Bits, Einerstelle
25...27	Minuten-Bits, Zenerstelle
28	Prüfbit P 1
29...32	Stunden-Bits (Einerstelle)
33...34	Stunden-Bits (Zenerstelle)
35	Prüfbit P 2
36...41	BCD-Code für Kalendertag
42...44	BCD-Code für Wochentag
45...49	BCD-Code für Kalendermonat
50...57	BCD-Code für Kalenderjahr
58	Prüfbit P 3
59	100 % Trägerleistung

Please see the detailed signal structure from the following table:

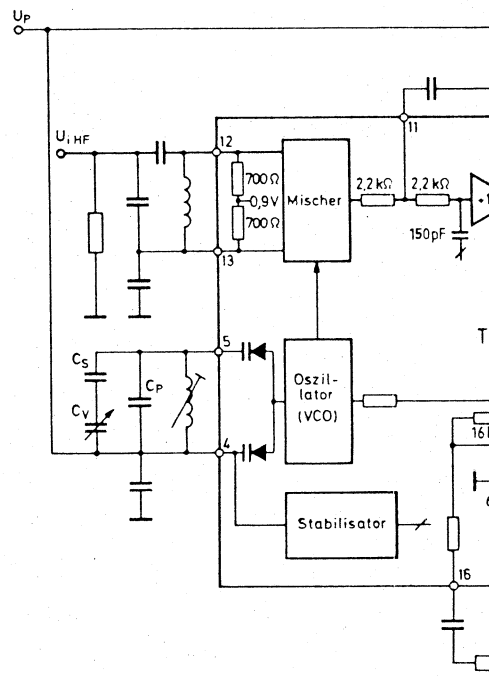
Second-Bit	Information
0	Minute mark M
1 ... 14	Open. Here the sender can make a code according to demand.
15	Information R. The transmission is effected with alternate antenna. yes/no.
16	Information A. Announcement when the change of the clock to summer time begins and when it ends.
17/18	H at summer time.
19	No information
20	Startbit S for coded time information = H
21 ... 24	Minute-bits, one-digit-place
25 ... 27	Minute-bits, ten-digit-place
28	Test bit
29 ... 32	Hour-bits, one-digit-place
33 ... 34	Hour-bits, ten-digit-place
35	Test-bit P 2
36 ... 41	BCD-code for calendar days
42 ... 44	BCD-code for calendar weeks
45 ... 49	BCD-code for calendar months
50 ... 57	BCD-code for calendar years
58	Test bit P 3
59	100 % carrier frequency power

U1 PCB-80C51 (Aufdruck Eben 100015) (with print Eben 100015)

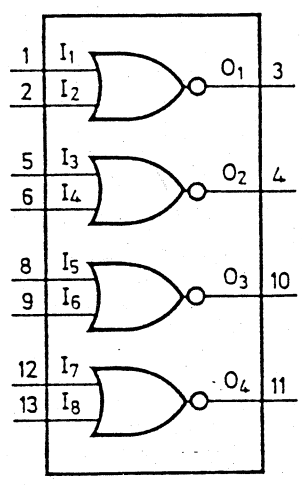




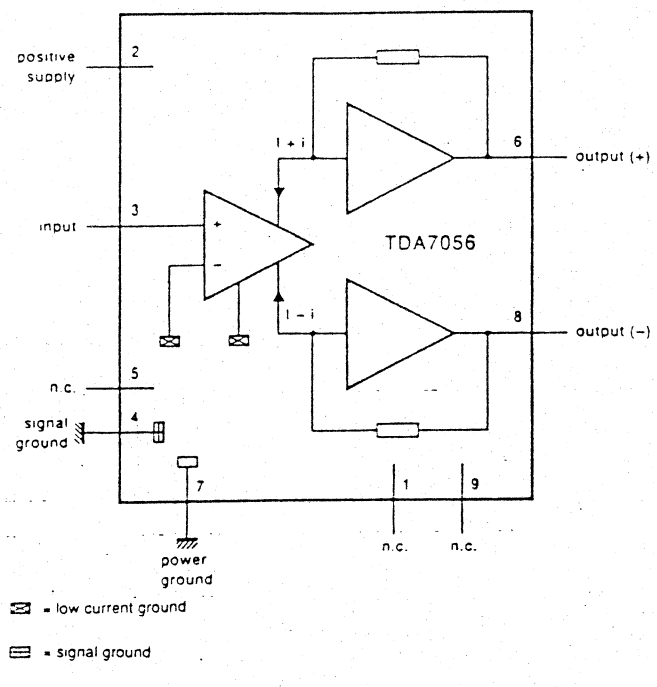
U5 TDA7021T Tuner



U7 HEF4001

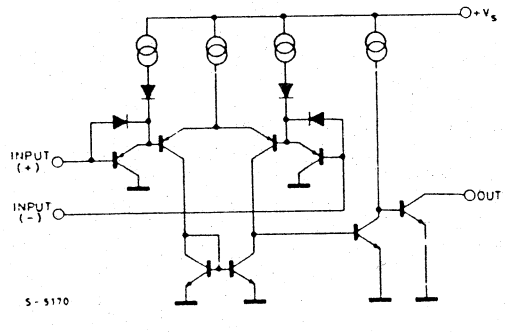


U2 TDA7056



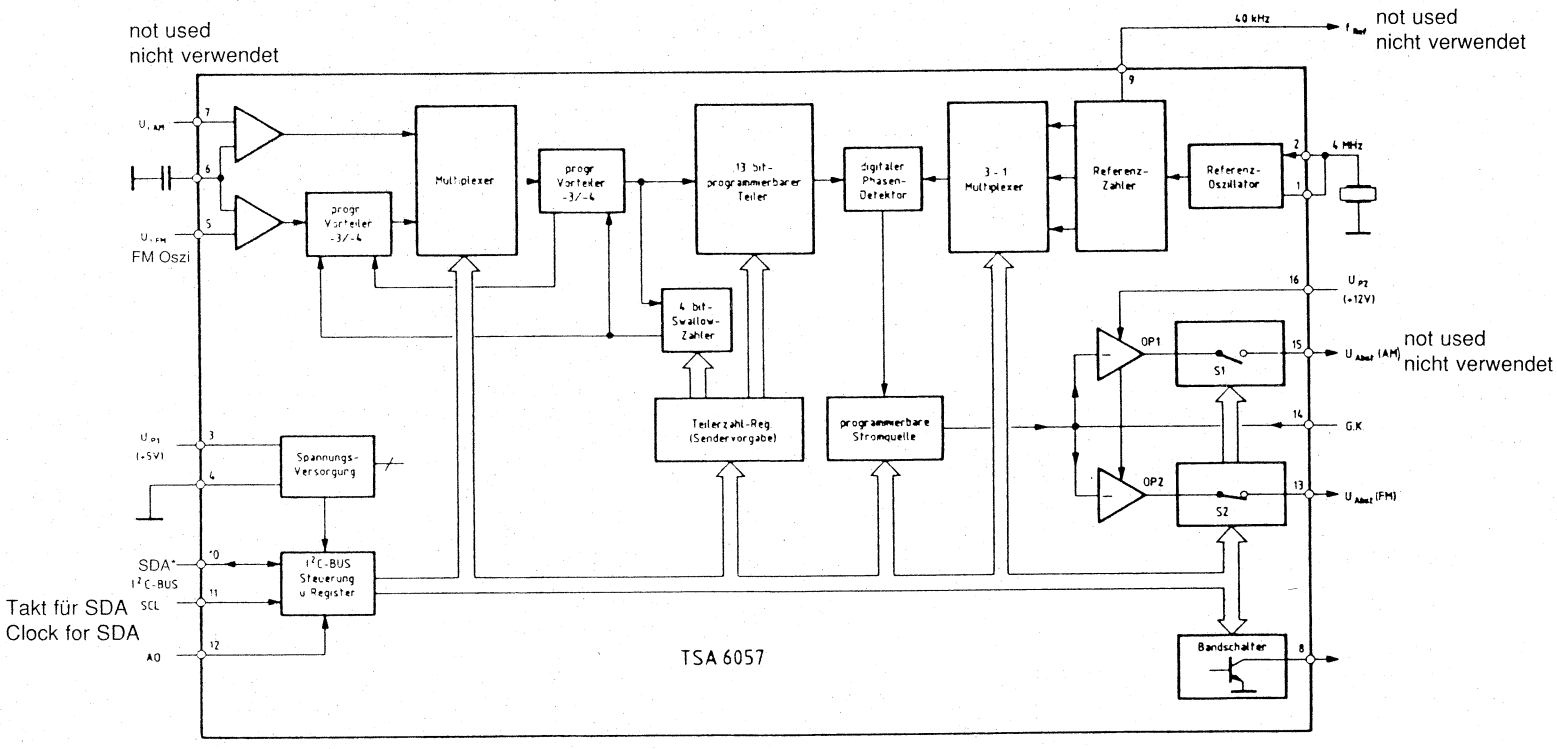
PIN	DESCRIPTION
1	n.c.
2	VP
3	input (+)
4	signal ground
5	n.c.
6	output (+)
7	power ground
8	output (-)
9	n.c.

U3 LM339N Spannungskomparator



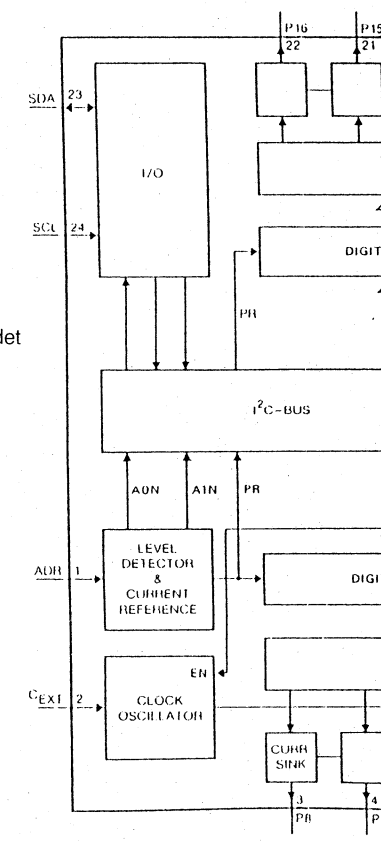
PIN NO.	FUNCTION
1.	E CATHODE
2.	D CATHODE
3.	C CATHODE
4.	DP2 CATHO
5.	D1 & DP2
6.	E CATHODE
7.	D CATHODE
8.	C CATHODE
9.	DP3 CATHO
10.	D2 & DP3
11.	E CATHODE
12.	D CATHODE
13.	C CATHODE
14.	DP4 CATHO
15.	D3 & DP4
16.	E CATHODE
17.	D CATHODE
18.	C CATHODE
19.	D4 COMMON
20.	DP5 ANODE

U4 TSA6057PLL



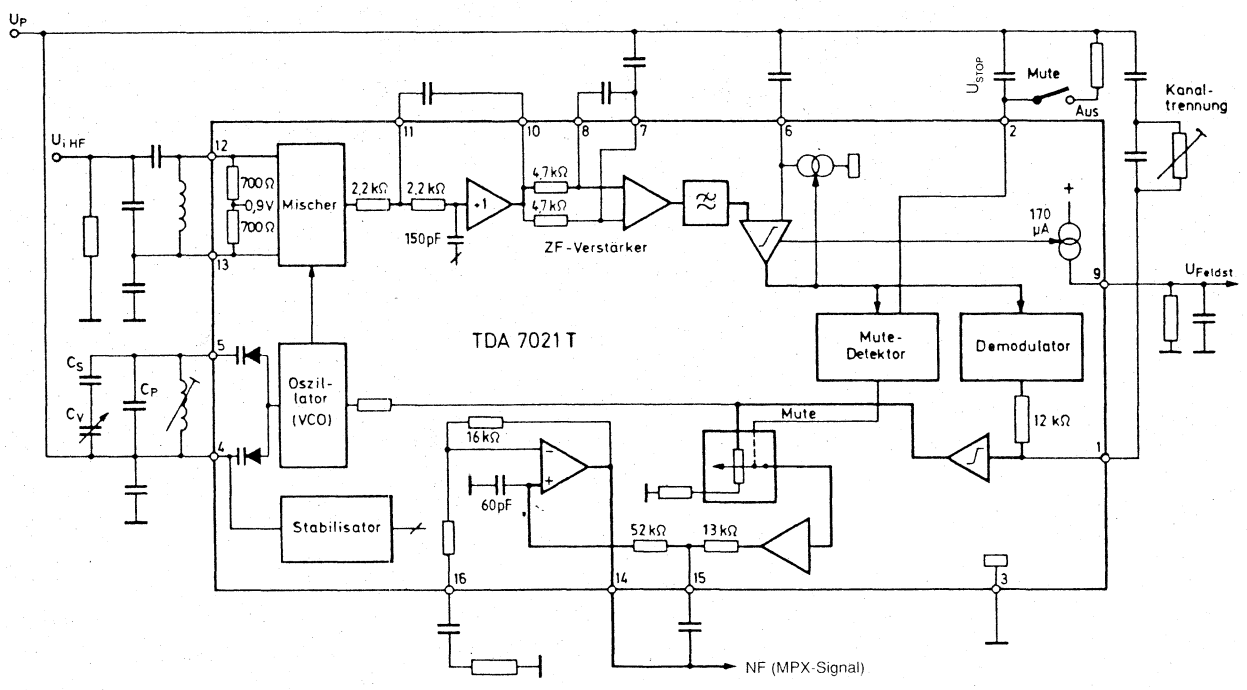
* 6 byte-Signale wie Teilerfaktorangaben, Referenzfrequenzangaben, Stromquellenprogram mierung, Pineinschaltungen, Verstärkeraktivierungen und Bandumschaltungsangaben.

U101 SAA1064T LED-Trei

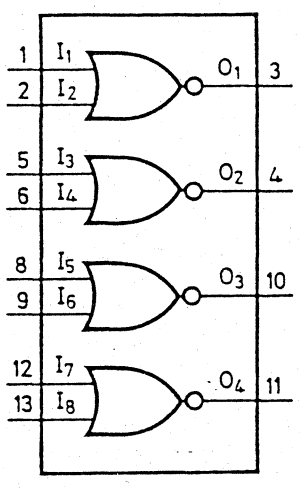


VCC
P0.0/AD0
P0.1/AD1
P0.2/AD2
P0.3/AD3
P0.4/AD4
P0.5/AD5
P0.6/AD6
P0.7/AD7
EA/Vpp
ALE/PROG
PSEN
P2.7/A15
P2.6/A14
P2.5/A13
P2.4/A12
P2.3/A11
P2.2/A10
P2.1/A9
P2.0/A8

U5 TDA7021T Tuner



U7 HEF4001

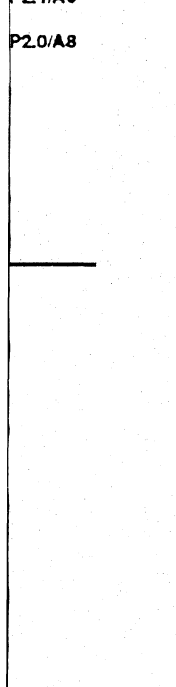


L101 LA60X4-586

PIN NO. FUNCTION

1. E CATHODE (D1)
2. D CATHODE (D1)
3. C CATHODE (D1)
4. DP2 CATHODE
5. D1 & DP2 COMMON ANODE
6. E CATHODE (D2)
7. D CATHODE (D2)
8. C CATHODE (D2)
9. DP3 CATHODE
10. D2 & DP3 UPPER/LOWER COLON COMMON ANODE
11. E CATHODE (D3)
12. D CATHODE (D3)
13. C CATHODE (D3)
14. DP4 CATHODE
15. D3 & DP4 COMMON ANODE
16. E CATHODE (D4)
17. D CATHODE (D4)
18. C CATHODE (D4)
19. D4 COMMON ANODE
20. DP5 ANODE
21. DP5 CATHODE
22. B CATHODE (D4)
23. G CATHODE (D4)
24. A CATHODE (D4)
25. F CATHODE (D4)
26. B CATHODE (D3)
27. G CATHODE (D3)
28. A CATHODE (D3)
29. F CATHODE (D3)
30. UPPER/LOWER COLON CATHODE
31. B CATHODE (D2)
32. G CATHODE (D2)
33. A CATHODE (D2)
34. F CATHODE (D2)
35. B CATHODE (D1)
36. G CATHODE (D1)
37. A CATHODE (D1)
38. F CATHODE (D1)
39. DP1 ANODE
40. DP1 CATHODE

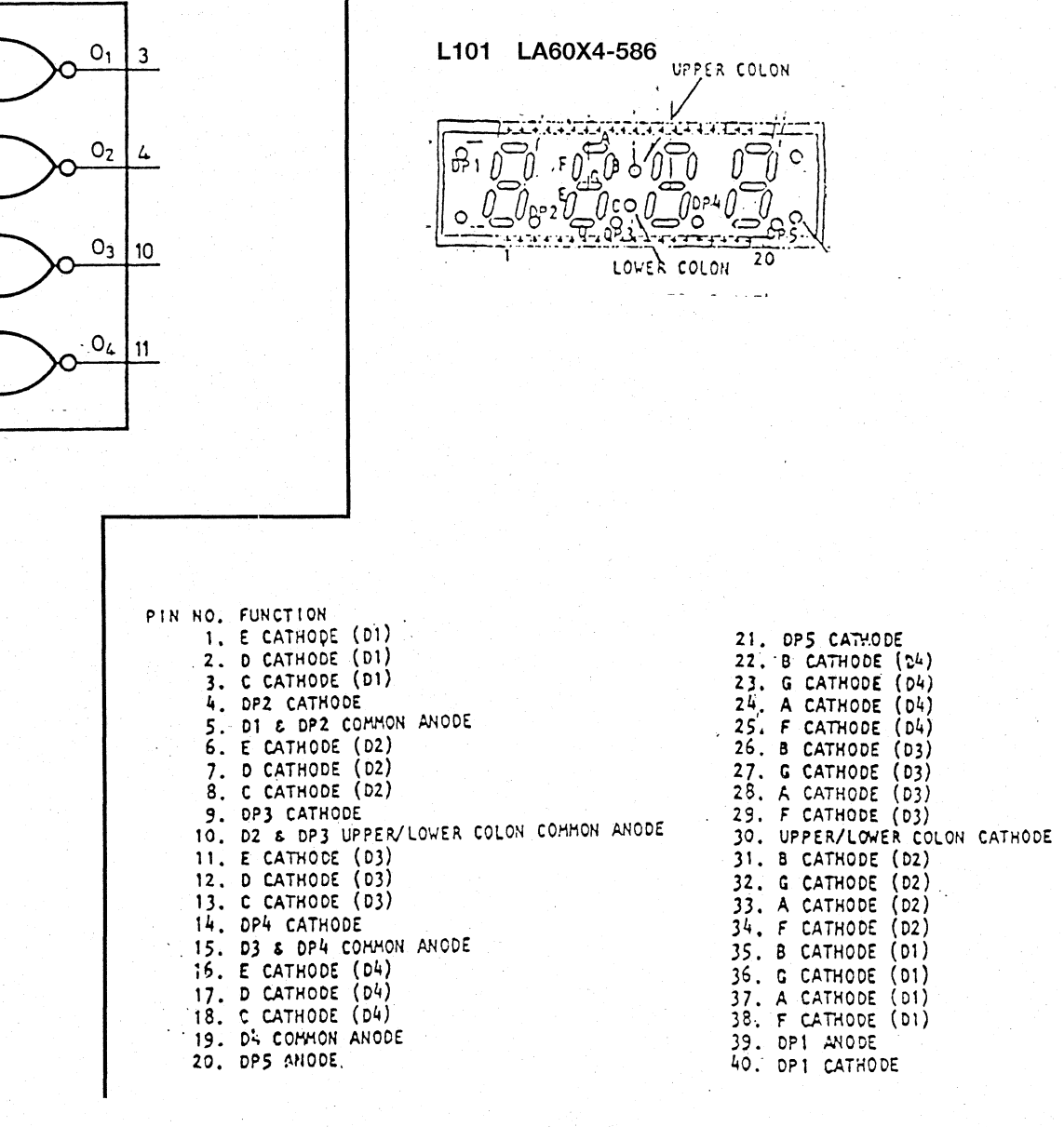
40 kHz → fRef not used / nicht verwendet



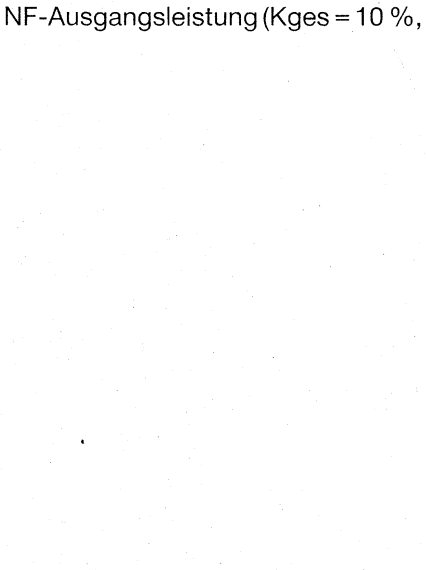
not used / nicht verwendet

uellenprogram
gsangaben.

U101 SAA1064T LED-Treiber



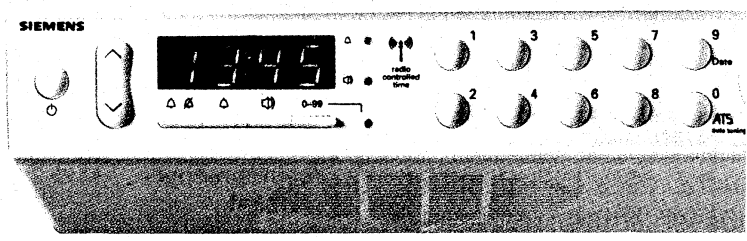
U102 HCT4094



H = HIGH voltage level
L = LOW voltage level
X = don't care
Z = high impedance OFF-state
NC = no change
↑ = LOW-to-HIGH CP transition
↓ = HIGH-to-LOW CP transition
Q'6 = the information in the seventh register stage is transferred to the 8th register stage and QS_n output at the positive clock edge

INP	
CP	OE
↑	L
↓	L
↑	H
↑	H
↑	H
↓	H

SIEMENS



Allgemeine Technische Angaben

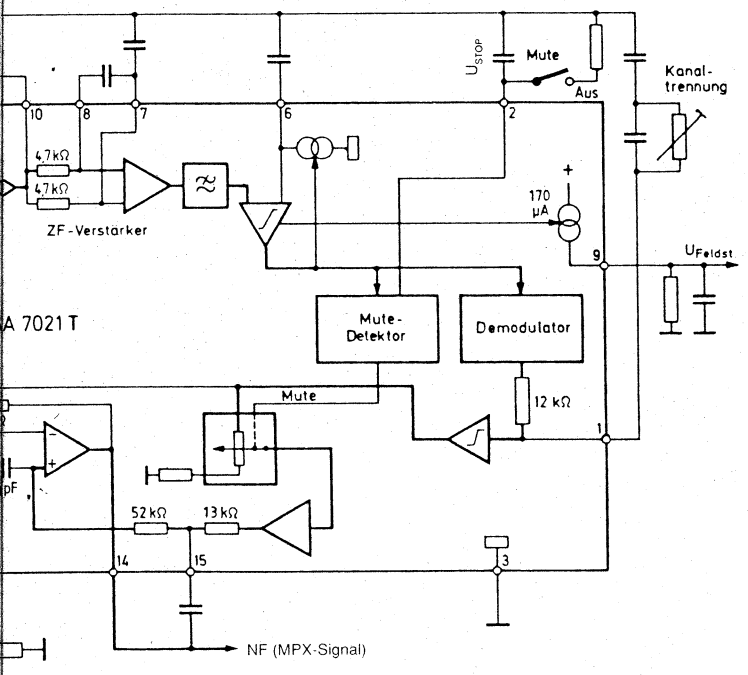
Netzteil
Energieversorgung: 230 V, 50 Hz
Sicherung: 250 V / 0,630 A / träge

Radio
Wellenbereich: 87,5 ... 108 MHz
10 UKW-Stationsspeicher

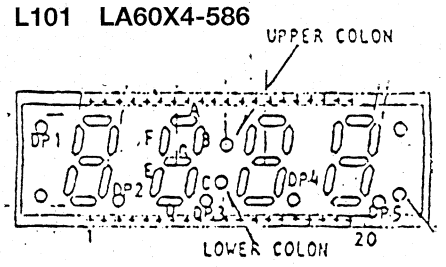
Uhr
Funkuhr

Verstärker
NF-Ausgangsleistung (Kges = 10 %, 1 kHz): 2 W

Ge
Po
Po
Fu
Ra
Ra
10
Cl
Ra
An
Po



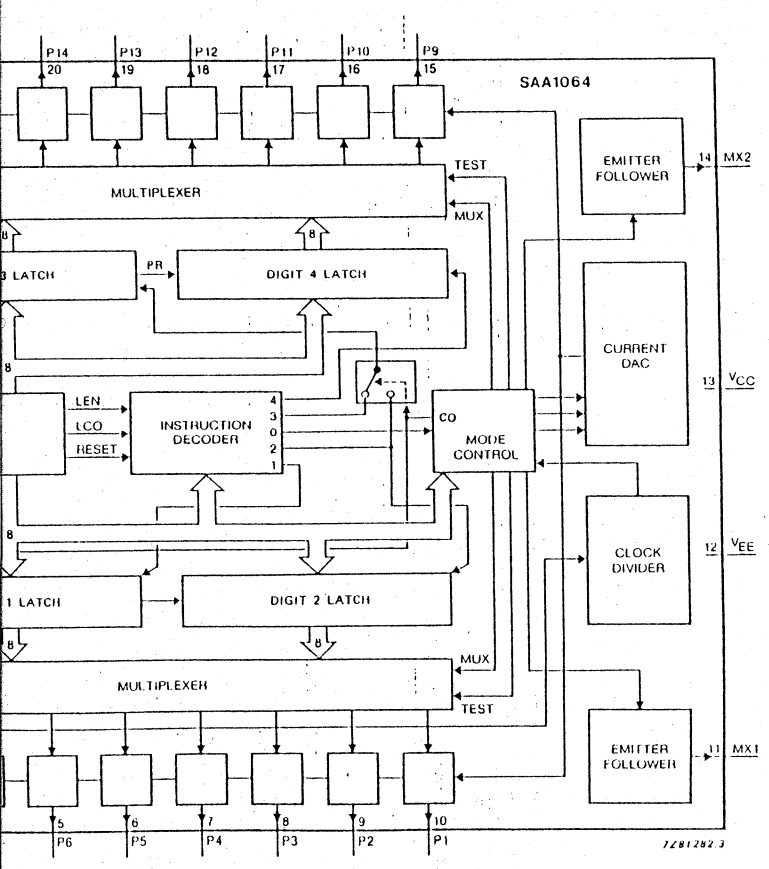
L101 LA60X4-586



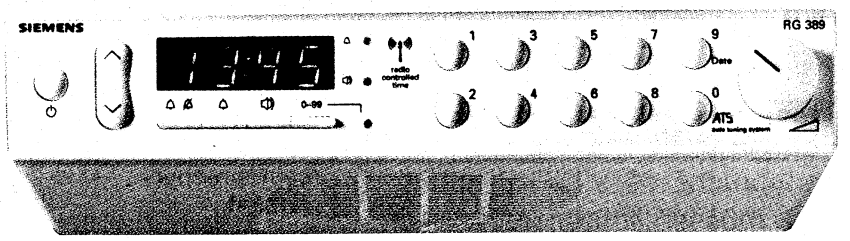
(D1)
(D1)
(D1)
E
OMMON ANODE
(D2)
(D2)
(D2)
E
PPER/LOWER COLON COMMON ANODE
(D3)
(D3)
(D3)
E
OMMON ANODE
(D4)
(D4)
(D4)
ANODE

21. DP5 CATHODE
22. B CATHODE (D4)
23. G CATHODE (D4)
24. A CATHODE (D4)
25. F CATHODE (D4)
26. B CATHODE (D3)
27. G CATHODE (D3)
28. A CATHODE (D3)
29. F CATHODE (D3)
30. UPPER/LOWER COLON CATHODE
31. B CATHODE (D2)
32. G CATHODE (D2)
33. A CATHODE (D2)
34. F CATHODE (D2)
35. B CATHODE (D1)
36. G CATHODE (D1)
37. A CATHODE (D1)
38. F CATHODE (D1)
39. DP1 ANODE
40. DP1 CATHODE

ber



SIEMENS



Küchenradio RG389F3/F5
Clockradio RG389F3/F5
for Kitchen

Kundendienstschrift
Service manual

SIEM- 01045

Allgemeine Technische Angaben

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Wellenbereich: 87,5 ... 108 MHz

10 UKW-Stationsspeicher

Uhr

Funkuhr

Verstärker

NF-Ausgangsleistung (Kges = 10 %, 1 kHz): 2 W

General Technical Data

Power supply unit

Power supply: 230 V, 50 Hz

Fuse: 250 V / 0.630 A / slow-blowing

Radio

Range: 87.5 ... 108 MHz

10 FM-presets

Clock

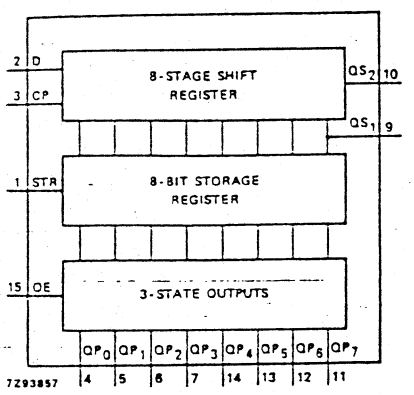
Radio signal clock

Amplifier

Power output (T.H.D = 10 %, 1 kHz): 2 W

1045

U102 HCT4094



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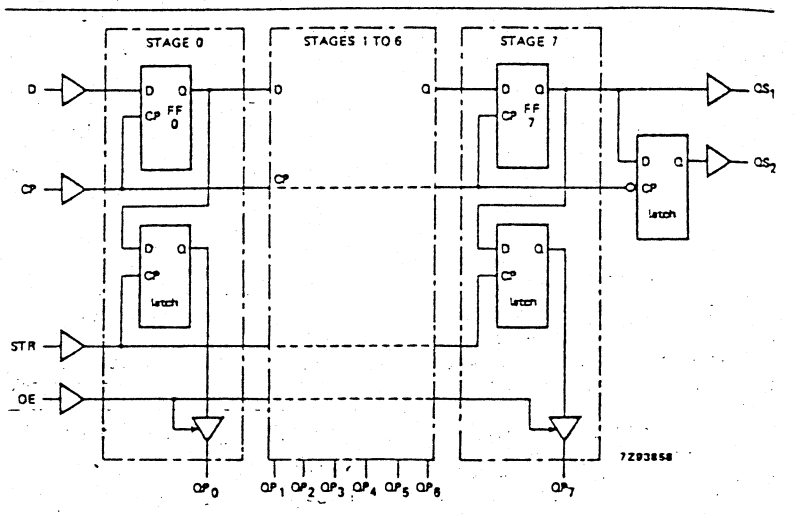

INPUTS				PARALLEL OUTPUTS		SERIAL OUTPUTS	
CP	OE	STR	D	QP_0	QP_n	QS_1	QS_2
↑	L	X	X	Z	Z	Q'_6	NC
↓	L	X	X	Z	Z	NC	QP_7
↑	H	L	X	NC	NC	Q'_6	NC
↑	H	H	L	L	QP_{n-1}	Q'_6	NC
↑	H	H	H	H	QP_{n-1}	Q'_6	NC
↓	H	H	H	NC	NC	NC	QP_7

ANTENNE
A1
UFST
100N C10
8K2 R2
3N3 C11
56P C12
56P C13
C14 220P
10K R3
U5
TDA 7021T
C16 3N3
STOP
330P C7
1N5 C6
100N C5
100N C3
10N C2
D2 LL4148
D1 LL4148
R5 15K
100uF/16V C17
U2
R13 33R
1N C9
L2
C8 120P
R12 6K8
10N C4
BBY40 NB
C31
U2
1K R1
OSC
R38 2K2
C42 22P
22R R24
C36 10N
C19 2P2
U4
TSA 6057
C20 10N
100uF/16V C24
D12 12V
R9 1K
U1
220N C21
3N9 C22
R6 100K
SCL
SDA
U2
R8
U-REF
R10
U4
U2 R40 100R
U5
R37 100R
R21 10K
100N C27
U3
R7 R30 R31 R35 4x4K7
D8
L4 33uH
U1
VCC P0.0
GND
SDA
SCL
STR 4094
FU-ON
VOL
RES
10N C44
LL4148 D16
BC 847C T6
9V1 D13
R29 4K7
R49 C54 C40 100N
100uF/16V
P0.7
P3.0
BEEP
FS+TE STOP
DCF-77
ON
F
MU
T6:3
D9
NB C45
OSC
22P C35
22P C37
C38 NB
XTA2
XTA1
P3.7
U3 /EA
X 10uF/25V
RES
C41
R28 10K
D17
PSEN
ALE
BC 857C
T1
R46
R47
T6:3
U2
P2.0
SL-STOP
LL4148 D10
P2.7
RES
P1.0
P1.7
STR 4094
U4
SDA
SCL
A5
OFFEN
OFFEN
C46
C53
U3
UFST
220K R4
F
C30 10N
U1
U3
12
NB C32
10K R15
STOP
10K R16
U2
R17 47K
UFST
R27 NB
U3
U-REF
U2
47K R41
D15 LL4148
U7 4001
A4
DCF - MODUL
U5 R36 470R
R44 10K
1M R42
C55
C56
R43
2M2 C57 22N
100N 100N
U2
2K7 R25
1M R26
100N C34
U3
R34 4K7
47N C33
T5 BC 847C
MU
T3
R23 680R
FU-ON
BC 847C
T103
R101 10K
C102 2N7
100N C10
P1A P2A P3A P4A P5A P6A
C105 C107 C108 C109 C110 C111 C112
22K R205
100N C205
U201
FK0950CC
220K R201
C201 6N8
Q201 77.287kHz
C202 100uF/16V
220K R202
C203 10uF/25V
LL4148 D201
220K R207
10K 2% R208
77.504kHz Q202
R206 1M 2%
15N 5% C207
15N 5% C206
2K7 2% R209
6N8 C209
201
202
33K R212
33K R215
S201
2M2 R213
100N C208
1M 2% R210
1M 2% R211
BC 857C T201
C204 10uF/25V
R204 47K
R214 4K7
UP IMP
+UB
UP EIN/AUS
R201
C210 100N
C211 10uF
RG389 REV-E- 2.12.1992 HAUPTPLATINE

OSC
U2
R38 2K2
100uF/16V
C24
D12
R9 1K
U1
12V
. 1K
R1
C42
U4
22R R24
22P
1
16
0 NB
C31
C36
10N
220N
3N9
C21
C22
C19 2P2
TSA 6057
R6
100K
SCL
SDA
C20
10N
8
9

U6
7805
U2
2
1
3
10K R8
C26 100N
U-REF
R10 10K
D7
LL4148
C25
C15
2200uF/25V
U1
D3
C1 100N
SI
0.630 T
A2
D4
A6
A3
220V
100N
4 X 1N4001
D5
D6
C23
100N

U4
SI-WID 2R2
R39
1N4001
D11
C39 1000uF/16V
X
R45

U2
R25 2K7
1M
R26
100N
C34
U3
R34 4K7
47N
C33
T5 BC 847C
MU
T3
R23 680R
F

U1
U-REF
11
U3
13
3K3
R14
BD 136
T2
DN
10
C18 100N
C28
100uF/16V
2
4K7
R33
3
4K7
3N3
R18
C29
U2
6
A8
8
A9
4
1
5
9
7

STOP
U2
UFST
FU-ON
47K
R41
D15
LL4148
U2
14
8
U7
4001
1
7
A4
DCF -
MODUL
U5
R36
470R
R44
10K
1M
R42
C55
100N
C56
100N
2M2
R43
C57
22N

U2
BEEP
220K R32
BC 847C
T4
330K
R19
C43
NB
39K
VOL
R22
R11
NB
100K
R20
IMPULS

STB5V-B
BC 847C
T104
10K
R104
R108
R102
R103
R105
220R
220R 220R 220R
LE9
LE10
LE11
LE1
LE2
LE3
LE4
LE5
LE6
100N
C106
16
CD 4094
10
15
3
2
1
U102
11
12
13
14
7
6
5
4
8

L101
BC 847C
T103
BC 847C
T102
R101 10K
U101
SAA 1064
14
11
T101
BC 847C
STB5V-B
1
2
12
19
23
24
C102
2N7
100N
C101
10uF/10V
C104
C103
100uF/6,3V

S17
S13
S14
S15
S9
S10
S11
S5
S6
S7
S1
S2
S3

P1A P2A P3A P4A P5A P6A P7A P8A P9A P10A P11A P12A P13A P14A P15A P16A
C105 C107 C108 C109 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121

STB5V-B
OFFEN
L102
1
A101

C209
L201
33K
R212
R215
33K
L202
S201

U1
U6
7805
100N
C1
D3
D4
SI
0.630 T
A2
A6
A3
220V
4 X 1N4001
D7
LL4148
C25
C15
2200uF/25V
D5
D6
C28
SI-WID 2R2
R39
1N4001
D11
C39
1000uF/16V
X
R45
U-REF
ON
U3
3K3
R14
BD 136
T2
C18
C28
100uF/16V
4K7
R33
R18
C29
3N3
U2
A8
A9
BC 847C
T4
220K
R32
330K
R19
C43
NB
R11
39K
R22
100K
R20
IMPULS
STB5V-B
BC 847C
T104
10K
R104
BC 857C
T105
R108
R102
R103
220R
R105
R106
LE9
LE10
LE11
LE1
LE2
LE3
LE4
LE5
LE6
LE7
LE8
C106
CD 4094
U102
L101
U101
T102
T101
C104
10uF/10V
C103
100uF/6,3V
P8A
P10A
P12A
P14A
P16A
P9A
P11A
P13A
P15A
C113
C114
C115
C116
C117
C118
C119
C120
C121
OFFEN
L102
A101
S17
S13
S14
S15
S16
S9
S10
S11
S12
S5
S6
S7
S8
S1
S2
S3
S4
47K
R107
SV1

LE1 " 1 "
LE2 " 3 "
LE3 " 5 "
LE4 " 7 "
LE5 " 2 "
LE6 " 4 "
LE7 " 6 "
LE8 " 8 "
LE9 " RADIO "
LE10 " ALARM "
LE11 " 0-99 "

S1 " ON/OFF "
S2 " >> "
S3 " << "
S4 " 1 "
S5 " ALARM SET "
S6 " RADIO SET "
S7 " 0-99 SET "
S8 " ALARM ON/OFF "
S9 " 3 "
S10 " 5 "
S11 " 7 "
S12 " 9 DATE "
S13 " 2 "
S14 " 4 "
S15 " 6 "
S16 " 8 "
S17 " 0 ATS "